Weston Solutions, Inc.
Suite 201
1090 King Georges Post Road
Edison, New Jersey 08837-3703
732-585-4400 • Fax 732-225-7037
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REMOVAL SUPPORT TEAM 2
EPA CONTRACT EP-W-06-072

RST 2-02-F-2684

TRANSMITTAL MEMO

To: Ángel Rodríguez, On-Scene Coordinator
Caribbean Environmental Protection Branch
U.S. EPA, Region II

From: Smita Sumbaly, Data Reviewer
RST 2, Region II

Subject: Puerto Rico Olefins Asbestos Site
Data Validation Assessment

Date: January 14, 2014

The purpose of this memo is to transmit the following information:

- Data validation results for the following parameters:

  Asbestos TEM 13 Samples

- Matrices and Number of Samples

  Wipe 12 Samples
  Field Blank 1 Sample

- Sampling Dates: January 2 and 3, 2014

The final data assessment narrative and original analytical data package are attached.

cc: RST 2 SPM: Carlos Huertas
RST 2 SITE FILE TDD #: TO-0029-0122
ANALYTICAL TDD #: TO-0029-0133
PCS#: 7133

U.S. ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

DATE: **January 14, 2014**

TO: **Ángel Rodríguez, On-Scene Coordinator**
U.S. EPA, Region II

FROM: **Smita Sumbaly**
RST 2 Data Review Team

SUBJECT: **QA/QC Compliance Review Summary**

As requested quality control and performance measures for the data packages noted have been examined and compared to EPA standards for compliance. Measures for the following general areas were evaluated as applicable:

Data Completeness
Sample Collection, Holding Times, and Preservation
Blank Analysis
Sample Sensitivity
Monthly Report TEM Calibrations

Any statistical measures used to support the following conclusions are attached so that the review may be reviewed by others.

Summary of Results

	I Asbestos TEM
Acceptable as Submitted	X
Acceptable with Comments	
Unacceptable, Action Pending	
Unacceptable	

Data Reviewed by: Smita Sumbaly Date: 1/14/14

Approved By: Date: 1/14/14

Area Code/Phone No.: (732) 585-4410

NARRATIVE

PCS No. 7133

SITE NAME: **Puerto Rico Olefins Asbestos Site**
PR 385 KM 5.4 Int., 127 Tallaboa Ponente,
Ward Penuelas, Puerto Rico

Laboratory Name: EMSL Analytical, Inc., 200 Route 130 North, Cinnaminson, New Jersey.

INTRODUCTION:

The laboratory's portion of this case consisted of 13 wipe samples including one field blank sample. All samples were collected on January 2 and 3, 2014. The EMSL Order ID number is **041400126**.

The laboratory reported No problem(s) with the receipt of these samples.

The laboratory reported problems with the analyses of Asbestos TEM: Due to excessive particulate the analytical sensitivity of 260 structure/square centimeter (str/cm^2) as required by the method was not reached for wipe samples.

The evaluator has commented on the criteria specified under each fraction heading. All criteria have been assessed, but no discussion is given where the evaluator has determined that criteria were adequately performed or require no comment. Details relevant to these comments are given on the following forms.

Appropriate Form Is and Chain of Custody have been copied from the original data package and appended to the data assessment narrative for reference.

Title: Evaluation of Asbestos Data
Data Assessment Narrative

RFP #: 272D/Task#: 7133 **Site: Puerto Rico Olefins Asbestos Site**

Lab: EMSL Analytical, Inc. **Matrix/No. of Samples: Wipe/13**

SDG#'s: 041400126 **Reviewer: SMITA SUMBALY**

Contractor: WESTON-RST 2

A.2.1 Validation Flags- The following flags have been applied in red by the data validator and must be considered by the data user.

J- This flag indicates the result qualified as estimated.

Red- Line- A red-line drawn through a sample result indicates an unusable value. The red-lined data are known to contain significant errors based on documented information and must not be used by the data user.

Fully Usable Data- The results that do not carry "J" or "red-line" are fully usable.

A.2.2 The data assessment is given below and on the attached sheets.

On January 2 and 3, 2014, U.S. EPA, Region II, RST 2 personnel collected 13 wipe samples, including one field blank sample, from the Puerto Rico Olefins Asbestos Site, located at PR 385 KM 5.4 Int., 127 Tallaboa Ponente, Ward Penuelas, Puerto Rico. On January 3, 2014, all 13 samples were shipped via FedEx to EMSL Analytical, Inc., 200 Route 130 North, Cinnaminson, NJ. The laboratory verified that the samples were received intact and properly custody sealed.

Thirteen wipe samples for asbestos were prepared and analyzed in accordance with Standard Test Method ASTM D6480-05 for Wipe Sampling of Surfaces, Indirect Preparation, and Analysis for Asbestos Structure Number Surface Loading by Transmission Electron Microscopy (TEM). Data was reported as asbestos str/cm^2 with fiber sizing and counting.

TEM analysis was performed using a procedure from TEM ASTM D6480. The sizing of structures (analysis) was performed on either a JEOL 100CX II or JEOL 1200 EX microscope at approximately 19,000X magnification.

All the samples are reported as str/cm^2. The target analytical sensitivity for these samples were 260 str/cm^2. Due to excessive particulate the analytical sensitivity of 260 str/cm^2 as required by the method was not reached. An aspect ratio of >5.1 was applied.

The laboratory reported the area sampled, asbestos type, asbestos structure, sensitivity, and concentration of asbestos detected. Results are provided in Table 1.

Client identification (ID) and laboratory ID numbers are as follows:

Client ID No.	Laboratory ID No	Matrix	Sampling Date	Analysis
EMSL Order No.:041400126				
FB1-010213	041400126-0001	Wipe	1/02/2014	Asbestos - TEM
P0029-WP01-01	041400126-0002	Wipe	1/02/2014	Asbestos - TEM
P0030-WP01-01	041400126-0003	Wipe	1/02/2014	Asbestos - TEM
P0031-WP01-01	041400126-0004	Wipe	1/02/2014	Asbestos - TEM
P0032-WP01-01	041400126-0005	Wipe	1/02/2014	Asbestos - TEM
P0033-WP01-01	041400126-0006	Wipe	1/02/2014	Asbestos - TEM
P0034-WP01-01	041400126-0007	Wipe	1/02/2014	Asbestos - TEM
P0035-WP01-01	041400126-0008	Wipe	1/03/2014	Asbestos - TEM
P0036-WP01-01	041400126-0009	Wipe	1/03/2014	Asbestos - TEM
P0037-WP01-01	041400126-0010	Wipe	1/03/2014	Asbestos - TEM
P0038-WP01-01	041400126-0011	Wipe	1/03/2014	Asbestos - TEM
P0039-WP01-01	041400126-0012	Wipe	1/03/2014	Asbestos - TEM
P0040-WP01-01	041400126-0013	Wipe	1/03/2014	Asbestos - TEM

Asbestos analysis of Wipe via TEM ASTM Method D6480-05:

Thirteen wipe samples were analyzed by ASTM Method D6480-05 for asbestos structure number surface loading by TEM. Data was reported as asbestos str/cm^2.

EMSL Order No.:041400126

Thirteen wipe samples were collected, including one field blank sample. Chrysotile asbestos was detected in all the field samples, except sample nos. P0030-WP01-01 and P0039-WP01-01. All field samples concentrations were reported between <2900 str/cm^2 to 160000 str/cm^2 chrysotile asbestos. Field blank sample and non-detect samples were reported as <2.99 asbestos structures.

Laboratory reported that due to excessive particulate the analytical sensitivity of 260 str/cm^2 as required by the method was not reached.

For QC purposes, the laboratory analyzed one lab blank, daily and monthly report for calibration standards and one intra-analyses. All QC results are acceptable.

TEM Equipment Performance Check

The laboratory performed monthly report for TEM calibrations which includes Chrysotile Beam Dose sensitivity (quarterly), Camera Constant calibrations, Plasma Asher Calibration, Magnification Calibrations, Spot Size Measurements (Quarterly), K Factors (Semi-annually), Detector Resolution (Semi-annually/Quarterly), Significant Na and resolvable Mg-Si Peaks (Quarterly), and daily TEM Calibrations. All calibrations met the "pass" criteria. No qualifiers were applied based upon this parameter.

The results presented for the wipe samples are acceptable as reported. No qualifications were required.

A.2.3 Contract Problem/Non-Compliance:

None

Contractor Reviewer: _____ Signature: 1/14/14 Date:

Verified by: _____ Signature: 1/14/14 Date:

TABLE 1

Project: Puerto Rico Olefins Asbestos Site

Sampling Dates: January 2 and 3, 2014

Standard Test Methods for Wipe Sampling of Surfaces, Indirect Preparation, and Analysis for Asbestos Structure Number Surface Loading by Transmission Electron Microscopy - D6480-05

Client Sample ID Number	Laboratory Sample ID Number	Area Sampled (cm^2)	Asbestos Type	Asbestos Structures	Sensitivity (str/cm^2)	Concentration (str/cm2)
FB-010213	041400126-0001	NA	None Detected	<2.99	-	-
P0029-WP01-01	041400126-0002	100	Chrysotile	23	4850	112000
P0030-WP01-01	041400126-0003	100	None Detected	<2.99	970	<2900
P0031-WP01-01	041400126-0004	100	Chrysotile	28	4850	136000
P0032-WP01-01	041400126-0005	100	Chrysotile	5	970	4850
P0033-WP01-01	041400126-0006	100	Chrysotile	5	970	4850
P0034-WP01-01	041400126-0007	100	Chrysotile	11	485	5340
P0035-WP01-01	041400126-0008	100	Chrysotile	24	4850	116000
P0036-WP01-01	041400126-0009	100	Chrysotile	33	4850	160000
P0037-WP01-01	041400126-0010	100	Chrysotile	27	1940	52400
P0038-WP01-01	041400126-0011	100	Chrysotile	5	4850	24300
P0039-WP01-01	041400126-0012	100	None Detected	<2.99	1940	<5800
P0040-WP01-01	041400126-0013	100	Chrysotile	<2.99	1940	<5800

NA - Not Applicable

str/cm^2 - Structure/Centimeter Square

1. Case Narrative

EMSL ANALYTICAL, INC.

200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-5974

January 8, 2014

Smita Sumbaly
Weston Solutions
1090 King Georges Post Road
Suite 201
Edison, NJ 08837
732-585-4400

Re: Narrative TEM ASTM 6480 041400126; RFP #: 272D, Site #: 0029-0122

Dear Smita:

On January 4, 2014, EMSL Analytical, Inc. in Cinnaminson, NJ received thirteen (13) wipe samples via overnight carrier from Weston Solutions for asbestos content analysis via TEM ASTM 6480. The samples were logged in following normal lab procedures. Samples were received under Chain of Custody and in good condition.

TEM ASTM 6480

Samples are prepared by rinsing the sampling wipe and sample bag into a clean 500 mL specimen container. The specimen cup is filled with 400 mL of deionized water and the pH is adjusted to 3-4 with acetic acid. Once the desired pH is achieved, the final volume in brought up to 500 mL. Multiple dilutions of each sample are filtered through a 47 mm MCE filtration apparatus. The filter is dried in a petri dish. A portion of the filter is prepared through a direct transfer technique. This technique requires the collapse of a filter wedge onto a microscopic slide with hot acetone vapor. The collapsed filter is then etched to remove the top 5% of the filter and a thin layer of carbon is deposited on the filter. The carbon coated filter is placed on top of a copper mesh TEM grid and the filter polymer is wicked away in an acetone bath.

Samples were analyzed by Transmission Electron Micrscopy (TEM) via ASTM 6480-05. All data was reported as structures per square centimeter. The target analytical sensitivity for these dust samples was 260 S/cm^2. Due to excessive particulate, the analytical sensitivity of 260 S/cm^2 as required by the method was not reached. An aspect ratio of $\geq$ 5:1 was applied.

Results

All samples associated with this EMSL order ID were analyzed via transmission electron microscopy (TEM) using procedures from TEM ASTM 6480. Analysis was performed on JEOL 100 CX II microscopes at approximately 19,000x magnification. Chrysotile was detected in all field samples with the exception of samples P0030-WP01-01 and P0039-WP01-01.

EMSL ANALYTICAL, INC.

200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-5974

Quality Control Performed

The Quality Control (QC) and the equipment calibration were performed in compliance with EMSL's Quality Assurance Manual. One (1) blank and one (1) intra-analyst QC samples were analyzed. All QC results presented within this data package were found to be concordant.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. In addition, I certify, that to the best of my knowledge and belief, the data as reported are true and accurate. Release of the data contained in this data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

1-7-09

Date

Steve Seigel, CIH
Asbestos Laboratory Manager
EMSL – Cinnaminson, NJ

2. Tabulated Sample Results

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com cinnasblab@EMSL.com

EMSL Order:	041400126
CustomerID:	RFWE53
CustomerPO:	0084577
ProjectID:	

Attn: **Smita Sumbaly**
Weston Solutions (King Georges Post)
1090 King Georges Post Road
Suite 201
Edison, NJ 08837

Phone:	(732) 585-4400
Fax:	
Received:	01/04/14 10:40 AM
Analysis Date:	1/6/2014
Collected:	1/3/2014

Project: **RFP #272D 2-010314-111646-0013**

Test Report: Asbestos Analysis of Wipe Samples Using Method ASTM 6480

SAMPLE ID	AREA SAMPLED (cm^2)	ASBESTOS TYPE	ASBESTOS STRUCTURES	Sensitivity (str/cm^2)	CONCENTRATION (str/cm^2)	COMMENTS
FB-010213 *041400126-0001*		None Detected	<2.99			Blank
P0029-WP01-01 *041400126-0002*	100	Chrysotile	23	4850	112000	Due to excessive particulate the analytical sensitivity of 260 str/cm^2 as required by the method was not reached.
P0030-WP01-01 *041400126-0003*	100	None Detected	<2.99	970	<2900	Due to excessive particulate the analytical sensitivity of 260 str/cm^2 as required by the method was not reached.
P0031-WP01-01 *041400126-0004*	100	Chrysotile	28	4850	136000	Due to excessive particulate the analytical sensitivity of 260 str/cm^2 as required by the method was not reached.
P0032-WP01-01 *041400126-0005*	100	Chrysotile	5	970	4850	Due to excessive particulate the analytical sensitivity of 260 str/cm^2 as required by the method was not reached.
P0033-WP01-01 *041400126-0006*	100	Chrysotile	5	970	4850	Due to excessive particulate the analytical sensitivity of 260 str/cm^2 as required by the method was not reached.
P0034-WP01-01 *041400126-0007*	100	Chrysotile	11	485	5340	Due to excessive particulate the analytical sensitivity of 260 str/cm^2 as required by the method was not reached.
P0035-WP01-01 *041400126-0008*	100	Chrysotile	24	4850	116000	Due to excessive particulate the analytical sensitivity of 260 str/cm^2 as required by the method was not reached.
P0036-WP01-01 *041400126-0009*	100	Chrysotile	33	4850	160000	Due to excessive particulate the analytical sensitivity of 260 str/cm^2 as required by the method was not reached.
P0037-WP01-01 *041400126-0010*	100	Chrysotile	27	1940	52400	Due to excessive particulate the analytical sensitivity of 260 str/cm^2 as required by the method was not reached.

Analyst(s)

Chris Little (11)
Frank Craig (2)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ

Initial report from 01/06/2014 07:54:39

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com cinnasblab@EMSL.com

EMSL Order:	041400126
CustomerID:	RFWE53
CustomerPO:	0084577
ProjectID:	

Attn: **Smita Sumbaly**
Weston Solutions (King Georges Post)
1090 King Georges Post Road
Suite 201
Edison, NJ 08837

Phone:	(732) 585-4400
Fax:	
Received:	01/04/14 10:40 AM
Analysis Date:	1/6/2014
Collected:	1/3/2014

Project: **RFP #272D 2-010314-111646-0013**

Test Report: Asbestos Analysis of Wipe Samples Using Method ASTM 6480

SAMPLE ID	AREA SAMPLED (cm^2)	ASBESTOS TYPE	ASBESTOS STRUCTURES	Sensitivity (str/cm^2)	CONCENTRATION (str/cm^2)	COMMENTS
P0038-WP01-01 *041400126-0011*	100	Chrysotile	5	4850	24300	Due to excessive particulate the analytical sensitivity of 260 str/cm^2 as required by the method was not reached.
P0039-WP01-01 *041400126-0012*	100	None Detected	<2.99	1940	<5800	Due to excessive particulate the analytical sensitivity of 260 str/cm^2 as required by the method was not reached.
P0040-WP01-01 *041400126-0013*	100	Chrysotile	<2.99	1940	<5800	Due to excessive particulate the analytical sensitivity of 260 str/cm^2 as required by the method was not reached.

Analyst(s)

Chris Little (11)
Frank Craig (2)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ

Initial report from 01/06/2014 07:54:39

THIS IS THE LAST PAGE OF THE REPORT.

04140126

USEPA
DateShipped: 1/3/2014
RFP# 272D
PO# 0084577

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Smita Sumbaly
Contact Phone: 732-585-4400

No: 2-010314-111646-0013
Cooler #: 1
Lab: EMSL
Lab Phone: 800-220-3675

Lab #	Sample #	Analyses (0480 Rev 2)	Matrix	Collection Method	Collected	Sample Time	Numb Cont	Container	Preservative	Area Width	Area Length	Vol Units	Lab QC
	FB-010213	Asbestos TEM	Wipe	Grab	1/2/2014	12:05	1	Plastic Bag	None	0	0	cm	N
	P0029-WP01-01	Asbestos TEM	Wipe	Grab	1/2/2014	12:09	1	Plastic Bag	None	10	10	cm	N
	P0030-WP01-01	Asbestos TEM	Wipe	Grab	1/2/2014	12:29	1	Plastic Bag	None	10	10	cm	N
	P0031-WP01-01	Asbestos TEM	Wipe	Grab	1/2/2014	12:43	1	Plastic Bag	None	10	10	cm	N
	P0032-WP01-01	Asbestos TEM	Wipe	Grab	1/2/2014	12:57	1	Plastic Bag	None	10	10	cm	N
	P0033-WP01-01	Asbestos TEM	Wipe	Grab	1/2/2014	13:38	1	Plastic Bag	None	10	10	cm	N
	P0034-WP01-01	Asbestos TEM	Wipe	Grab	1/2/2014	13:50	1	Plastic Bag	None	10	10	cm	N
	P0035-WP01-01	Asbestos TEM	Wipe	Grab	1/3/2014	09:10	1	Plastic Bag	None	10	10	cm	N
	P0036-WP01-01	Asbestos TEM	Wipe	Grab	1/3/2014	09:21	1	Plastic Bag	None	10	10	cm	N
	P0037-WP01-01	Asbestos TEM	Wipe	Grab	1/3/2014	10:24	1	Plastic Bag	None	10	10	cm	N
	P0038-WP01-01	Asbestos TEM	Wipe	Grab	1/3/2014	10:51	1	Plastic Bag	None	10	10	cm	N
	P0039-WP01-01	Asbestos TEM	Wipe	Grab	1/3/2014	11:21	1	Plastic Bag	None	10	10	cm	N
	P0040-WP01-01	Asbestos TEM	Wipe	Grab	1/3/2014	11:33	1	Plastic Bag	None	10	10	cm	N

2014 JAN -4 A 10:41
RECEIVED
EMSL
EDISON, N.J.

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltuions.com

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analytes	Joel Petty RSTJ	1/3/14 1330			
			OMB-ft-1040A	1-4-14	

(13)

7. NVLAP/AIHA Certifications

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 101048-0

EMSL Analytical, Inc.

Cinnaminson, NJ

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

AIRBORNE ASBESTOS FIBER ANALYSIS

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2013-07-01 through 2014-06-30

Effective dates

For the National Institute of Standards and Technology

NVLAP-01C (REV. 2009-01-28)

NVLAP® National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
Mr. Stephen Siegel, CIH
Phone: 800-220-3675 Fax: 856-786-5973
E-Mail: ssiegel@emsl.com
URL: http://www.emsl.com

AIRBORNE ASBESTOS FIBER ANALYSIS (TEM) **NVLAP LAB CODE 101048-0**

NVLAP Code	*Designation / Description*
18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.

2013-07-01 through 2014-06-30
Effective dates

For the National Institute of Standards and Technology

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 101048-0

EMSL Analytical, Inc.

Cinnaminson, NJ

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

BULK ASBESTOS FIBER ANALYSIS

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2013-07-01 through 2014-06-30

Effective dates

For the National Institute of Standards and Technology

NVLAP-01C (REV. 2009-01-28)

51

NVLAP® National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
Mr. Stephen Siegel, CIH
Phone: 800-220-3675 Fax: 856-786-5973
E-Mail: ssiegel@emsl.com
URL: http://www.emsl.com

BULK ASBESTOS FIBER ANALYSIS (PLM) **NVLAP LAB CODE 101048-0**

NVLAP Code	*Designation / Description*
18/A01	EPA 600/M4-82-020: Interim Method for the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

2013-07-01 through 2014-06-30
Effective dates

For the National Institute of Standards and Technology

AIHA Laboratory Accreditation Programs, LLC

acknowledges that

EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077

Laboratory ID: 100194

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA-LAP), LLC accreditation to the ISO/IEC 17025:2005 international standard, *General Requirements for the Competence of Testing and Calibration Laboratories in* the following:

LABORATORY ACCREDITATION PROGRAMS

✓	**INDUSTRIAL HYGIENE**	Accreditation Expires: 07/01/2014
✓	**ENVIRONMENTAL LEAD**	Accreditation Expires: 07/01/2014
✓	**ENVIRONMENTAL MICROBIOLOGY**	Accreditation Expires: 07/01/2014
☐	**FOOD**	Accreditation Expires:

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached **Scope of Accreditation**. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2005 and AIHA-LAP, LLC requirements. This certificate is not valid without the attached **Scope of Accreditation**. Please review the AIHA-LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

S. D. Allen Iske, PhD, CIH, CSP
Chairperson, Analytical Accreditation Board

Cheryl O. Morton

Cheryl O. Morton
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision 12: 03/29/2012

Date Issued: 07/31/2012

AIHA
Laboratory Accreditation Programs, LLC

AIHA Laboratory Accreditation Programs, LLC
SCOPE OF ACCREDITATION

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077

Laboratory ID: **100194**
Issue Date: 07/31/2012

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or revocation. A complete listing of currently accredited Industrial Hygiene laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org

Industrial Hygiene Laboratory Accreditation Program (IHLAP)

Initial Accreditation Date: 02/01/1989

IHLAP Scope Category	Field of Testing (FoT)	Technology sub-type/ Detector	Published Reference Method/Title of In-house Method	Method Description or Analyte *(for internal methods only)*
Chromatography Core	Gas Chromatography	GC/ FID	NIOSH 1003	
			NIOSH 1005	
			NIOSH 1400	
			NIOSH 1500	
			NIOSH 1550	
			NIOSH 1603	
			NIOSH 2000	
		GC/ECD	NIOSH 5502	
			NIOSH 5503	
			NIOSH 5510	
			OSHA 1010	
		GC/NPD	NIOSH 2551	
	GC/MS		EPA TO-15	
	Gas Chromatography (Diffusive Samplers)		NIOSH 1501	
	Ion Chromatography (IC)		NIOSH 6004	
			NIOSH 6011	
			NIOSH 7903	
			OSHA ID-214	
			OSHA ID-215	
	Liquid Chromatography	HPLC/FL	NIOSH 5506	
		HPLC/UV	NIOSH 2016	

AIHA

ratory Accreditation Programs, LLC

IHLAP Scope Category	Field of Testing (FoT)	Technology sub-type/ Detector	Published Reference Method/Title of In-house Method	Method Description or Analyte *(for internal methods only)*
Spectrometry Core	Atomic Absorption	CVAA	NIOSH 6009	
			OSHA ID-145	SOP LM-015
			OSHA ID-145	SOP LM-013
		FAA	NIOSH 7082	
		GFAA	NIOSH 7105	
	Inductively-Coupled Plasma	ICP/MS	NIOSH 7300 Modified	
		ICP/AES	NIOSH 7300	
	X-ray Diffraction (XRD)		NIOSH 7500	
			OSHA ID-142	
	UV/VIS (Colorimetric)		NIOSH 6010	
Asbestos/Fiber Microscopy Core	Polarized Light Microscopy (PLM)		EPA 600/R-93/116	
	Phase Contrast Microscopy (PCM)		NIOSH 7400	
	Transmission Electron Microscopy (TEM)		EPA AHERA - 40 CFR Part 763	
			NIOSH 7402	
Miscellaneous Core	Gravimetric		NIOSH 0500	
			NIOSH 0600	
			NIOSH 5524	
	Thermo-optical Analysis (TOA)		NIOSH 5040	

The laboratory participates in the following AIHA-LAP, LLC-approved proficiency testing programs:

- ✓ AIHA-PAT Programs, LLC IHPAT Metals
- ✓ AIHA-PAT Programs, LLC IHPAT Organic Solvents
- ✓ AIHA-PAT Programs, LLC IHPAT Silica
- ✓ AIHA-PAT Programs, LLC IHPAT Diffusive Sampler (3M)
- ☐ AIHA-PAT Programs, LLC IHPAT Diffusive Sampler (SKC)
- ☐ AIHA-PAT Programs, LLC IHPAT Diffusive Sampler (AT)
- ✓ AIHA-PAT Programs, LLC IHPAT Asbestos
- ☐ AIHA-PAT Programs, LLC Bulk Asbestos (BAPAT)
- ☐ AIHA-PAT Programs, LLC Beryllium (BePAT)
- ✓ HSE Workplace Analytical Scheme for Proficiency (WASP) (Formaldehyde)
- ☐ HSE Workplace Analytical Scheme for Proficiency (WASP) (Thermal Desorption Tubes)
- ☐ Pharmaceutical Round Robin
- ☐ Compressed/Breathing Air Round Robin
- ✓ National Voluntary Laboratory Accreditation Program (NVLAP - determined at the time of site assessment)
- ☐ New York State Department of Health (NYS DOH – PCM and TEM)
- ✓ ERA Air and Emissions standards for indoor air quality
- ☐ Institut für Arbeitsschutz der Deutschen Gesetzlichen Unfallversicherung (IFA, formerly BGIA)
- ☐ Institut de Recherche Robert-Sauvé en Santé et en Sécurité du Travail (IRSST)